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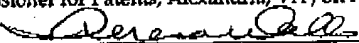
PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants :	Alexander E. Gash et al	Docket No. :	IL-10781B
Serial No. :	10/626,098	Art Unit :	
Filed :	July 23, 2003	Examiner	Henry Hu
For :	Inorganic Metal Oxide/Organic Polymer Nanocomposites and Method Thereof		

**CERTIFICATE OF MAILING BY "FIRST CLASS MAIL"**

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Teresa Walls**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Alexandria, VA 22313-1450

Dear Sir:

Prior to examination, please amend the above-identified patent application in the following manner.

The invention claimed is

~~{0001}~~ 1. (Currently Amended) A nanocomposite produced by the process comprising:

dissolving a metal ionsalt in a solvent system to form a metal ion salt solution, wherein said solvent system is common to said metal ion salt and a polymer;

adding an epoxide to said metal ion salt solution to form an epoxide-containing metal ion salt solution;

dissolving said polymer in said solvent system to form a polymer solution;

adding a portion of the polymer solution to the polymer-containing metal ion salt solution to form a polymer-containing, epoxide-containing metal ion salt solution; and

stirring said a polymer-containing, epoxide-containing metal ion salt solution until said solution gels.

~~{0002}~~ 2. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~10~~ 1, further comprising:

adding a fuel metal powder to said polymer-containing, epoxide-containing metal ion salt solution while stirring, wherein said addition of the fuel metal powder occurs before said polymer-containing, epoxide-containing metal ion salt solution gels.

~~{0003}~~ 3. (Currently Amended) The nanocomposite recited in Claim ~~10~~ 1, wherein said metal oxide is  $\text{Fe}_2\text{O}_3$ .

{0004} 4. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~10~~ 1, wherein said polymer is a fluoroelastomer.

{0005} 5. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~11~~ 2, wherein said fluoroelastomer is Viton®A, A-100.

{0006} 6. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~10~~ 1, wherein Viton®A, A-100 is soluble in said solvent system.

{0007} 7. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~10~~ 1, wherein said solvent system is a mixture of ethanol and acetone.

{0008} 8. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~11~~ 2, wherein said fuel metal powder is Al, Mg, B, Ti, Zr or mixtures thereof.

{0009} 9. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~11~~ 2, wherein said fuel metal powder is ultra fine grain aluminum.

{00010} 10. (Currently Amended) A nanocomposite comprising:  
an inorganic sol-gel polymer phase comprising at least one metal-oxide  
and at least one epoxide; and  
an interpenetrating organic polymer phase entwined in said inorganic sol-gel phase.

~~{00011}~~ 11. (Currently Amended) The nanocomposite recited in Claim ~~19~~ 10, wherein said inorganic sol-gel polymer phase further comprises:

A fuel metal powder.

~~{00012}~~ 12. (Currently Amended) The nanocomposite recited in Claim ~~19~~ 10, wherein said metal oxide is  $\text{Fe}_2\text{O}_3$ .

~~{00013}~~ 13. (Currently Amended) The nanocomposite recited in Claim ~~19~~ 10, wherein said polymer is a fluoroelastomer.

~~{00014}~~ 14. (Currently Amended) The nanocomposite recited in Claim ~~22~~ 13, wherein said fluoroelastomer is Viton®A, A-100.

~~{00015}~~ 15. (Currently Amended) The nanocomposite recited in Claim ~~20~~ 11, wherein said fuel metal powder is Al, Mg, B, Ti, Zr or mixtures thereof.

~~{00016}~~ 16. (Currently Amended) The nanocomposite recited in Claim ~~20~~ 11, wherein said fuel metal powder is ultra fine grain aluminum.

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**REGARDING:**

**IL-10781B**

**"Inorganic Metal Oxide/Organic Polymer Nanocomposites and Method Thereof"**

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Henry,

This is also being put in the mail by Express Mail today 5-4-2004.

Thank you

Teresa Walls  
Patent Administrator

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